

REMARKS

Claims 1-5, 7-10 and 13-23 are pending in the application. All pending claims currently stand rejected. The Examiner's rejections are addressed below.

REJECTIONS UNDER 35 USC § 112

The Examiner rejected Claims 1-5, 7-10 and 13-23 under 35 U.S.C. 112 for indefiniteness. The Examiner contends that the term "accelerate the removal of moisture" is indefinite. Applicant respectfully submits that the application as written provides ample context for this term as it is used in the application. Nevertheless, to expedite prosecution, Applicant has revised the independent claims to clarify the nature of the claimed invention. As revised, the independent claims generally recite a difference in two speeds such that more moisture is removed from within the air being conditioned at a first speed than at a second speed.

GROUND FOR ALLOWABILITY OF THE PENDING CLAIMS

Applicant in the Response to Final Office Action furnished several grounds for allowability of the pending claims, which is reproduced below. Although the Examiner has not rejected the claims on prior art grounds, to expedite prosecution, Applicant directs the Examiner's attention to the newly added recitation in the claims that even further distinguish the present claims from the prior art of record. Specifically, the independent claims recite that (i) the blower motor is an AC motor and (ii) the controller change blower motor speeds without varying the voltage applied to the blower motor. Such a combination is not found in the prior art of record.

Applicant discloses a controller that does not vary voltage to control speed in Figures 3 and 4 of the pending application. As noted in the specification, Figures 3 and 4 show exemplary wiring diagrams for components associated with embodiments of air conditioning systems contemplated by the present invention. As one versed in the art would recognize, these wiring arrangements do not vary voltage. Moreover, the specification clearly states that a "speed controller 46 constructed in accordance with the present invention has been shown to reduce blower speed to approximately 70% of full speed, significantly lower than is possible with newer "variable speed" furnaces that rely upon voltage variance" (paragraph 0027).

In contrast, Byrnes (6,070,660) expressly uses a controller that varies voltage:

Controller circuit 30a further includes a zero crossover detector circuit for the alternating current signal imposed on terminals 32 and 34,... The output signal from amplifier 68 is input to an R/C phase timer circuit including a resistor 76 and capacitor 78, which circuit is connected to an amplifier 80 whose output is connected by way of an optical coupler 82 to means for effectively varying the voltage imposed on motor 26, such as a triac 84. Triac 84 is in circuit with a conductor 86, which is connected to terminal 32, and terminal 42 which is operable to energize the motor 26 at the medium speed tap 23, see FIG. 2. Amplifier 80 is also connected to resistors 81 and 83 at an input terminal whereby the signal intensity of the amplifier output signal may be modified, as needed. A capacitor 85 is interposed in the output conductor of the amplifier 80 as shown. Other motor voltage controlling means may be used in place of triac 84, such as silicon controlled rectifiers, for example.

Thus, the controller of Byrnes is a voltage varying system which, as the present specification explains, is distinct and different from the controller of the present invention.

Additionally, Archer (U.S. Pat. No. 5,592,059) is directed to only DC motors. Applicant has not found a single instance in Archer where an AC motor is even mentioned. Since the pending claims recite an AC motor, Archer is clearly distinguishable from the present claims.

For convenience, Applicant's prior discussion of the prior art is furnished below and the reasons that the pending claims define over this art is provided below.

The Prior Art of Record

The Examiner previously cited Byrnes et al and Archer in the rejections against some of the pending claims. These two references are discussed in detail below.

U.S. Pat. No. 6,070,660; Byrnes, et al

To Applicant's reading, Byrnes et al. discloses control of the fan speed to minimize temperature stratification of air. Byrnes et al does not disclose using a difference in two speeds such that more moisture is removed from within the air being conditioned at a first speed than at a second speed. Control of the fan speed is not in any manner controlled to accelerate reduction of moisture in the air. This is clearly the case since the speed control is used during both cooling cycles and heating cycles. As is commonly known in the art, dehumidification is largely a non-issue during heating cycles. Thus, Byrnes et al does not

teach or suggest control of the fan speed to accelerate the removal of moisture from the air. Additionally, the fan speed of Byrnes et al is continuously varied. For convenience, the abstract of Byrnes et al is reproduced below with the relevant sections highlighted:

A forced air heating and/or cooling system utilizing a permanent split capacitor (PSC) or shaded pole AC induction motor and including an actuator for energizing a source of heating and/or cooling effect may be controlled by a controller circuit which is operable to continuously vary the speed of the fan motor during a start-up phase and a shut-down phase of the heating and/or cooling cycle. The controller circuit includes terminals for connection to the source of electrical energy for the heating and/or cooling system and for connection to the system controls without altering the control function or circuitry thereof. The controller circuit includes elements for operating the fan motor to continuously vary its speed on start-up over a first predetermined time period and to continuously vary its speed down to a predetermined minimum on shutdown of the heating or cooling equipment over a second predetermined time period to minimize temperature stratification of air in the space being cooled or heated and to maximize capture of residual heat/cooling effect of the system. Another embodiment of the controller circuit includes temperature sensors which are operable to control start-up and shutdown of the fan motor over continuously variable speed operating cycles in response to sensed temperature of the air being circulated by the fan.

U.S. Pat. No. 5,592,059. Archer

To Applicant's reading, Archer discloses arrangements for electronic control of the fan speed. Archer does not disclose using a difference in two speeds such that more moisture is removed from within the air being conditioned at a first speed than at a second speed. Control of the fan speed is not in any manner controlled to accelerate reduction of moisture in the air. In fact, Archer expressly connects fan motor speed to the temperature of the circulated air. Moreover, like Byrnes et al, the speed control provide continuously variable fan speeds during both cooling cycles and heating cycles. As is commonly known in the art, dehumidification is largely a non-issue during heating cycles. Thus, Archer does not teach or suggest control of the fan speed to accelerate the removal of moisture from the air. For convenience, the abstract of Archer is reproduced below with the relevant sections highlighted:

A system for driving a blower of a heating, ventilating, and/or air conditioning (HVAC) system. The blower discharges heated or cooled air to a space for conditioning the air in the space by changing its temperature. A motor drives the blower at a speed or torque defined by a motor control signal thereby to

control air flow rate of the HVAC system. The system includes a temperature sensor generating a temperature signal representative of the temperature of the air discharged to the space by the blower. In response to the temperature signal, a control circuit generates the motor control signal to cause the motor to operate at a minimum speed or torque until the temperature of the discharged air as represented by the temperature signal reaches a reference temperature. After the temperature of the discharged air reaches the reference temperature, the control circuit generates the motor control signal to control the motor speed or torque as a function of the difference between the temperature of the discharged air and the reference temperature whereby the air flow rate of the HVAC system is increased as the temperature difference increases.

Claims 1, 13 and 19

With respect to amended independent claims 1, 13 and 19, neither Byrnes et al nor Archer disclose using a difference in two speeds such that more moisture is removed from within the air being conditioned at a first speed than at a second speed. Specifically, neither of these references controls fan speed to accelerate the removal of moisture from the air being conditioned. Thus, these references do not anticipate the pending claims. Further, as noted above, these references are directed to either generic control over an HVAC system (Archer) or reduction in mixing of stratified air (Byrnes et al.). Applicant found no hint or suggestion for modifying the disclosed systems to accelerate reduction of moisture in the air being conditioned. Thus, the prior art of record does not obviate the pending claims. Accordingly, Applicant respectfully submits that amended claims 1, 13 and 19 are in condition for allowance and such action is requested.

Claims 3, 16 and 20

With respect to amended dependent claims 3, 16 and 20, neither Byrnes et al nor Archer disclose a speed control wherein the initial slower speed is substantially fixed. As noted above, both of the vary the fan speed. Thus, these references do not anticipate claims 3, 16 and 20. Further, Applicant found no hint or suggestion for utilizing a fixed first slower speed. Thus, the prior art of record does not obviate these claims. Accordingly, Applicant respectfully submits that amended claims 3, 16 and 20 are in condition for allowance and such action is requested.

Claims 4,5,7-10, 14,15, 17-19 and 21-23

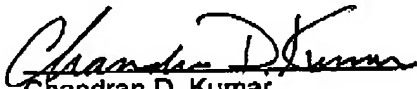
With respect to amended dependent claims 4,5,7-10,14,15, 17-19 and 21-23, these claims depend from independent claims believed to be in condition for allowance and are believed to be allowable on at least those grounds.

CONCLUSION

For all the foregoing reasons, Applicant submits that the application is in a condition for allowance. The Commissioner is hereby authorized to charge any additional fees or credit any overpayment to Deposit Account No. 13-0010 (CUR-1001-US).

Respectfully submitted,

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CERTIFICATE OF FACSIMILE TRANSMISSION

I do hereby certify that this correspondence is being transmitted via facsimile, to the Commissioner for Patents, Examiner **Chen Wan Jiang** via facsimile no. (571) 273-8300, on this February 28, 2006.


Margaret A. Pruitt

CUR-1001-US

11